

FILED

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA

THE TRUSTEES OF COLUMBIA  
UNIVERSITY IN THE CITY OF NEW  
YORK,

*Plaintiff*

vs.

SYMANTEC CORPORATION,

*Defendant*

Civil Action No. 3:13cv808

2013 DEC -5 A 10: 25  
CLERK US DISTRICT COURT  
RICHMOND, VIRGINIA

**JURY TRIAL DEMANDED**

**COMPLAINT**

Plaintiff The Trustees of Columbia University in the City of New York ("Columbia") files this complaint against Defendant Symantec Corporation ("Symantec") for patent infringement and correction of inventorship, and alleges as follows:

**INTRODUCTION**

1. Columbia brings this action to remedy Symantec's violations of Columbia's intellectual property rights in important computer security innovations. Protecting data exchanged in email and over networks from viruses and other malicious intrusions into our computers presents ever-increasing challenges. The creativity and hard work of Columbia professors and researchers has resulted in next generation techniques for detecting intrusions even for attacks that have never been seen before. Symantec is infringing several Columbia patents on computer security and intrusion detection, including United States Patent Nos. 7,487,544; 7,979,907; 7,448,084; 7,913,306; and 8,074,115, as set forth in more detail in this Complaint. When Columbia alerted Symantec to Columbia's patent rights and invited a licensing negotiation, Symantec ignored Columbia. Columbia brings this action to redress Symantec's infringement of Columbia's patents and the innovations of its researchers.

2. Columbia also brings this action to remedy Symantec's conversion of Columbia's intellectual property embodied in disclosures that Columbia made to Symantec when the parties collaborated in submitting proposals to United States government agencies regarding Columbia's research on using "decoys" in detecting and preventing malicious computer attacks. Columbia expected and understood that Symantec would respect Columbia's right to seek patent protection for Columbia's own inventions and would not use what Columbia disclosed to Symantec to seek patent protection for Symantec's own benefit. This did not prove to be the case. After Columbia disclosed technical information on decoy technology, provided drafts of grant proposals, and even told Symantec that Columbia had filed patent applications on the technology, Symantec filed its own patent applications on Columbia's technology without listing the Columbia researchers as inventors on the applications. Symantec not only concealed this fact from Columbia, but misled Columbia into believing that Symantec would not file its own patent applications on Columbia's technology. To prevent Columbia from discovering the truth, Symantec requested that the United States Patent and Trademark Office ("PTO") not publish the application as would ordinarily occur.

3. Symantec's misconduct only came to light when the PTO issued United States Patent No. 8,549,643 (the "'643 patent'"), which lists a single Symantec employee as the sole inventor and shows Symantec as the sole assignee of all rights in the patent. Columbia now seeks to correct inventorship on the '643 patent to list the true inventors and secure Columbia's rights in the patent.

#### **PARTIES**

4. Columbia is a non-profit educational corporation formed by special act of the Legislature of the State of New York located at 535 West 116th Street, New York, New York, 10027. The research that is the subject of this lawsuit has its source in Columbia's School of Engineering and Applied Sciences, which consists of more than 170 faculty, more than 3,500 students, and is dedicated to training future leaders in the field of engineering and working to solve some of our nation's most important security challenges.

5. Columbia is informed and believes, and on that basis alleges, that Defendant Symantec is a corporation organized and existing under the laws of the State of Delaware, with facilities throughout the United States and the world. Symantec makes and sells computer security, storage and systems management solutions, including consumer and enterprise software products and services that are designed and intended to secure and manage the information of Symantec customers. In so doing, Symantec conducts business throughout the United States and in this judicial district. Symantec's world headquarters is located at 35 Ellis Street, Mountain View, California 94043. Symantec has security research and response centers, development facilities, and technical support and customer services centers worldwide. Symantec currently has a Security Operations Center and offices located in Herndon, Virginia (formerly located in Alexandria, Virginia). Columbia is informed and believes, and on that basis alleges, that Symantec's Security Operations Center in this judicial district is integrally involved in the infringing activity that is the subject of this Complaint. Symantec's registered agent for service of process is Corporation Service Company, Bank of America Center, 16th Floor, 1111 East Main Street, Richmond, Virginia 23219.

#### **JURISDICTION AND VENUE**

6. This is an action for patent infringement under the Patent Laws of the United States, 35 U.S.C. §§ 1 *et seq.* and correction of inventorship under 35 U.S.C. § 256. This Court has subject matter jurisdiction over the claims of patent infringement and for correction of inventorship alleged herein under 28 U.S.C. § 1331 and §§ 1338(a).

7. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. § 1400(b) because, among other reasons, Symantec has offices and facilities in Herndon, Virginia and hence resides and is subject to personal jurisdiction in this judicial district. Further, a substantial part of the events or omissions giving rise to claims alleged herein occurred in this judicial district. Symantec has committed acts of infringement in this judicial district by, *inter alia*, selling and offering for sale infringing products in this judicial district and through the operation and maintenance of its Security Operations Center in Herndon, Virginia.

The dealings between Symantec and Columbia giving rise to Columbia's claims to correct inventorship also occurred in this judicial district.

## **FACTUAL BACKGROUND**

### **A. Columbia's Intrusion Detection Systems Laboratory**

8. The Department of Computer Science at Columbia supports research in various areas, including a wide diversity of computer security-related topics. This case centers on patents and research of Columbia professors and researchers working in and with the Intrusion Detection Systems Laboratory ("IDS Lab"), one of the research groups within a research organization in network and systems security at Columbia known as the Systems Security Center.

9. The IDS Lab at Columbia builds next-generation tools to detect stealthy and malicious intruders in computer systems. The computer security work at the IDS Lab includes, for example and among other things, research into anomaly detection, collaborative intrusion detection, attacker modeling, malicious code, and secure wireless networks.

10. Salvatore Stolfo, a Columbia Professor of Computer Science, heads the IDS Lab. Professor Stolfo is a distinguished professor and scholar. He received his Ph.D. from New York University's Courant Institute in 1979 and has been a member of Columbia's faculty ever since. Professor Stolfo won an IBM Faculty Development Award early in his academic career in 1983, and has published several books and well over 250 scientific papers since then, several winning best paper awards, in the areas of parallel computing, artificial intelligence knowledge-based systems, data mining and computer security and intrusion detection systems. His research has been supported by the United States Government's Defense Advanced Research Projects Agency ("DARPA"), National Science Foundation, the Office of Naval Research, and various other companies and public and private organizations and agencies. Professor Stolfo also has served as the Acting Chairman of Computer Science at Columbia and has served as the Director of the

New York State Center for Advanced Technology of Columbia and the National Science Foundation sponsored Digital Government Research Center at Columbia.

11. Professor Angelos Keromytis is one of Professor Stolfo's collaborators on important areas of research that are the subject of this action. Since January 2006, Professor Keromytis has been an Associate Professor of Computer Science at Columbia. He also is the Director of Columbia's Network Security Lab which is dedicated to performing advanced research in critical areas of network and systems security. Before assuming these positions, Professor Keromytis served as an Assistant Professor at Columbia from 2001 to 2005. Professor Keromytis currently resides in Annandale, Virginia and is a Program Director at the National Science Foundation in Arlington, Virginia in the Division of Computer and Network Systems ("CNS"), Directorate for Computer & Information Science & Engineering ("CISE").

**B. Columbia's Patented Technology**

12. The technology at issue in this case concerns important advances in the field of computer security. The world is becoming more and more connected every day. Computer networks are continually becoming larger and more complex, and the amount of information exchanged through electronic communication and email is increasing dramatically. As a result, computer security technologies designed to prevent malicious viruses and other unwanted or harmful intrusions to computer systems and networks are extremely important.

13. One challenge in computer security is how to detect viruses and other attacks never previously seen before by an intrusion detection system. These attacks often are referred to as "zero-day" attacks because they provide developers "zero days" to address and patch the vulnerability.

14. Professor Stolfo and his colleagues in Columbia's IDS Lab pioneered next generation intrusion detection technologies based on, among other things, data analysis and machine learning techniques that provide for vastly improved detection of new viruses and attacks never previously seen by an intrusion detection system. As but one example of their

groundbreaking work, Professor Stolfo and his colleagues developed systems that, among other things, can be trained to analyze large amounts of data about various kinds of files and generate detection models that far more effectively distinguish normal computer operation from anomalous or malicious behaviors. As a result of these advancements, executable programs (such as those that may be in an email attachment, for example) can be determined to be benign or malicious with a high degree of accuracy, even if the program has never been seen before. Professor Stolfo and his colleagues also developed systems whereby information about the detected intrusions can be rapidly and efficiently deployed and shared across communities of users.

15. The work of the IDS Lab has resulted in more than twenty United States patents assigned to Columbia and relating to new ways to combat computer and network security threats. This action involves claims of patent infringement of five of these United States patents.

16. United States Patent No. 7,487,544 (the “‘544 patent”), entitled “System and Methods For Detection of New Malicious Executables,” was duly and legally issued on February 3, 2009. The ‘544 patent generally relates to “detecting malicious executable programs, and more particularly to the use of data mining techniques to detect such malicious executables in email attachments.” ‘544 Patent, col. 1:33-37. The ‘544 patent contains claims directed to “classifying an executable attachment in an email received at an email processing application” and a “for classifying an executable program.” Columbia is the owner by assignment of the entire right, title and interest in and to the ‘544 patent and holds the right to sue and recover for past, present and future infringement. A true and correct copy of the ‘544 patent is attached as Exhibit A.

17. United States Patent No. 7,979,907 (the “‘907 patent”), entitled “Systems and Methods For Detection of New Malicious Executables,” was duly and legally issued on July 12, 2011. The ‘907 patent is a continuation of the application that resulted in the ‘544 patent and thus also generally relates to “detecting malicious executable programs, and more particularly to the use of data mining techniques to detect such malicious executables in email

attachments.” ‘907 Patent, col. 1:38-41. The ‘907 patent contains claims directed to “classifying an executable attachment in an email received at a computer system.” Columbia is the owner by assignment of the entire right, title and interest in and to the ‘907 patent and holds the right to sue and recover for past, present and future infringement. A true and correct copy of the ‘907 patent is attached as Exhibit B.

18. United States Patent No. 7,448,084 (the “‘084 patent”), entitled “System and Methods For Detecting Intrusions In A Computer System By Monitoring Operating System Registry Access,” was duly and legally issued on November 4, 2008. The ‘084 patent generally relates to “detecting anomalies in a computer system, and more particularly to the use of probabilistic and statistical models to model the behavior of process which access the file system of the computer, such as the Windows™ registry.” ‘084 Patent, col. 1:43-47. The ‘084 patent contains claims directed to “detecting intrusions in the operation of a computer system.” Columbia is the owner by assignment of the entire right, title and interest in and to the ‘084 patent and holds the right to sue and recover for past, present and future infringement. A true and correct copy of the ‘084 patent is attached as Exhibit C.

19. United States Patent No. 7,913,306 (the “‘306 patent”), entitled “System and Methods For Detecting Intrusions In A Computer System By Monitoring Operating System Registry Access,” was duly and legally issued on March 22, 2011. The ‘306 patent is a continuation of the application that resulted in the ‘084 patent and is also directed generally toward “methods for detecting intrusions in the operation of a computer system.” The ‘306 patent contains claims directed to a “method for detecting intrusions in the operation of a computer system.” Columbia is the owner by assignment of the entire right, title and interest in and to the ‘306 patent and holds the right to sue and recover for past, present and future infringement. A true and correct copy of the ‘306 patent is attached as Exhibit D.

20. United States Patent No. 8,074,115 (the “‘115 patent”), entitled “Methods, Media And Systems For Detecting Anomalous Program Executions” was duly and legally issued on December 6, 2011. The ‘115 patent generally relates to “detecting anomalous program

executions.” ‘115 Patent, col. 1:16-19. Columbia is the owner by assignment of the entire right, title and interest in and to the ‘115 patent and holds the right to sue and recover for past, present and future infringement. A true and correct copy of the ‘115 patent is attached as Exhibit E.

21. The ‘544, ‘907, ‘084, ‘306, and ‘115 patents are all publicly identified by title and patent number on the IDS Lab web page under the tab “Tech Transfer” at <http://ids.cs.columbia.edu/content/patents.html>.

**C. Symantec Had Knowledge Of Columbia’s Patents Yet Ignored the Opportunity to License Them**

22. Symantec was well aware of Professor Stolfo’s work in the IDS Lab and had actual knowledge of the ‘544, ‘907, ‘084, ‘306, and ‘115 patents described above.

23. On August 14, 2012, Calvin Chu, Senior Technology Licensing Officer at Columbia Technology Ventures, the technology transfer arm of Columbia, sent letters to Symantec’s Francis deSouza (President, Products and Services), Janice Chaffin (Group President, Consumer Business), and Anil Chakravarthy (Senior Vice President, Enterprise Security). The letters informed Symantec that Columbia “is the owner of many issued patents and pending patent applications (‘patent documents’) with a sampling identified in Exhibit A” and that “Columbia’s technology provides and confers important competitive advantages including new features and capabilities.” The letter specifically identified the ‘544, ‘907, ‘084, ‘306, and ‘115 patents by title and patent number and invited a licensing discussion with Columbia. In addition to identifying the patents, the letter was accompanied by a copy of the ‘544 patent (among other patents).

24. Symantec did not participate in any licensing discussions involving these patents. Indeed, Symantec did not even bother to respond to any of Columbia’s letters.

25. Symantec also had actual knowledge of the ‘544, ‘907, ‘084, ‘306, and ‘115 patents as a result of Symantec’s citation of each of the foregoing patents to the PTO as prior art to Symantec’s own patent applications. Symantec has also cited to the PTO Columbia’s United



States Patent Application Publication 2003/0065926, which eventually matured into the '544 patent.

26. In addition to direct dealings between Columbia and Symantec regarding the subject of the research in the IDS Lab, Symantec researchers have published papers that cite to Professor Stolfo's own published papers on (among other things) the application of machine learning techniques to intrusion detection. In particular and for example, Symantec researchers are co-authors on a paper entitled *Polonium: Tera-Scale Graph Mining and Inference for Malware Detection*, in *Proceedings of SIAM International Conference on Data Mining (SDM) 2011*. This paper acknowledges that Professor Stolfo and his colleagues "were among the first who used machine learning algorithms (Naive Bayes and Multi-Naive Bayes) to classify malware." In support of this statement of recognition, the Polonium paper cites pages from an article co-authored by Professor Stolfo, Matthew Schultz, Eleazar Eskin, and Erez Zadok entitled *Data Mining Methods For Detection Of New Malicious Executables*, *IEEE Symposium on Security and Privacy*, IEEE COMPUTER SOCIETY, 2001. The cited Stolfo article forms the basis of a provisional application that Columbia submitted to the PTO on July 30, 2001, as Provisional Patent Application No. 60/380,622, one of two provisional applications to which the '544 patent claims priority.

**D. Symantec's Misconduct During Its Collaboration With Columbia On "Decoy" Technology**

27. In addition to infringing on Columbia's patents as set forth in this Complaint, Symantec also induced Columbia to collaborate on matters relating to Professor Stolfo and Keromytis's research on decoy technology and then wrongfully sought and obtained for Symantec's own benefit patents on Columbia's work. Professors Stolfo and Keromytis had developed an innovative strategy for using decoys in detecting and thwarting viruses and other malicious intrusions by (among other things) baiting the attacks with false information. After Columbia disclosed its decoy technology to Symantec, Symantec adopted Columbia's work as its own by filing patent applications based on the materials Symantec received from Columbia

and naming only Symantec's own employees as inventors. Symantec's patent filings eliminated any mention of the true innovators and inventors (*i.e.*, Professors Stolfo and Keromytis). Symantec then tried to cover its tracks, taking steps to withhold key information from both Columbia and the PTO in an effort to ensure that its wrongful conduct was hidden. Additional facts and details regarding Symantec's wrongful conduct are provided below.

**a. Columbia Discloses Its Decoy Technology To Symantec**

28. In 2004, Columbia and Symantec discussed potential collaboration between Symantec and Professor Stolfo's lab. To facilitate these and future discussions without granting reciprocal intellectual property licenses to their respective confidential information, Columbia and Symantec entered into a "Mutual Non-Disclosure Agreement," dated November 29, 2004. The agreement specifically identifies as confidential information "all unpublished current and past research performed in Professor Sal Stolfo's computer sciences laboratories." The agreement further states that the parties shall use confidential information "only for the purpose for which it was disclosed" and not "use or exploit such information for their own benefit."

29. Beginning in 2006, Columbia collaborated with Symantec on drafting a series of grant proposals for potential projects relating to Columbia's decoy technology. In order to submit grant proposals to government agencies in Alexandria, Virginia, Columbia disclosed to Symantec details of Professors Stolfo and Keromytis's work relating to the use of decoy technology in computer security.

30. As one example, in 2006, Columbia and Symantec worked on a joint grant proposal to the National Intelligence Community Enterprise Cyber Assurance Program ("NICECAP") regarding Professors Stolfo and Keromytis's work on the use of decoy technology in computer security. Columbia's contact at Symantec was Symantec's Director of Government Research, Brian Witten, who Columbia is informed and believes, and that basis alleges, worked at Symantec's Herndon, Virginia facility at the time. Professor Keromytis prepared the first draft of the grant proposal and provided it to Mr. Witten on May 13, 2006. The draft proposal described some of Professors Stolfo and Keromytis's existing research regarding the use of a

“decoy system” in computer security to, for example, detect and prevent the loss of sensitive data. Symantec’s Witten submitted the proposal to NICECAP on May 25, 2006.

31. During the same time frame in 2006, Columbia sought to protect its intellectual property by filing patent applications on Professor Stolfo’s and Keromytis’s technology. On May 31, 2006, Columbia filed a provisional application number 60/809,898, and on May 31, 2007, Columbia also filed utility patent application number PCT/US07/12811 claiming priority to the provisional application. That utility application was published on December 13, 2007.

32. In 2010, Columbia and Symantec submitted a further joint grant proposal to DARPA in Arlington, Virginia on Professors Stolfo and Keromytis’s decoy technology. The bases for this 2010 proposal were the prior 2006 proposal originally prepared by Professor Keromytis, as well as a September 2009 paper relating to Professor Stolfo and Keromytis’s decoy technology entitled “Baiting Inside Attackers using Decoy Documents,” which detailed the basics of Professors Stolfo and Keromytis’s decoy technology to achieve, among other goals, data loss prevention. Darren Shou, a Senior Director at Symantec’s research labs, participated in the preparation of this grant proposal for Symantec. Professor Keromytis specifically directed Mr. Shou to Columbia’s 2006 NICECAP proposal and the September 2009 paper.

**b. Symantec Adopts Columbia’s Decoy Technology As Its Own**

33. Despite the fact that the decoy technology, and the idea to use this technology in a data loss prevention system, originated with Professors Stolfo and Keromytis, Symantec took steps to file its own patent applications on Columbia’s technology—while concealing these activities from Columbia. For example, Columbia is informed and believes, and on that basis alleges, that between March 2, 2010, and March 18, 2010, Symantec prepared an internal invention disclosure form based upon the materials that Professors Stolfo and Keromytis provided to Symantec.

34. On March 24, 2010, an in-house lawyer from Symantec, Delos Larson, contacted Professors Stolfo and Keromytis, describing himself as a “non-evil lawyer at Symantec.” Mr. Larson provided excerpted pages from the Symantec invention disclosure form and proposed

filing a Symantec patent application covering the use of the decoy technology with a data loss prevention system. Mr. Larson asked if Professors Stolfo and Keromytis thought they were inventors.

35. Both Professors Stolfo and Keromytis immediately confirmed that they were inventors. Professor Stolfo also informed Symantec that Columbia had developed the idea of using decoy technology in a data loss prevention system (as described in the Symantec invention disclosure form) long before. Columbia also informed Symantec that Columbia had filed its own patent applications on the technology.

36. None of this information deterred Symantec from misappropriating Columbia's technology for itself. On April 2, 2010, Symantec filed its own provisional patent application directed at Professors Stolfo and Keromytis's decoy technology, but the application failed to name Professors Stolfo and Keromytis as inventors. Mr. Larson—the so-called “non-evil lawyer”—never provided Columbia with a copy of the as-filed provisional application and made no mention that Symantec had completely omitted Professors Stolfo and Keromytis as inventors, notwithstanding their express confirmation that they were inventors of the technology and that the ideas originated from their work.

37. Symantec said nothing to Columbia about this provisional patent application until almost one year later, as the statutory deadline approached to file a utility application. On March 11, 2011, an outside Symantec patent attorney, Benjamin Kimes, contacted Columbia personnel, including Professors Stolfo and Keromytis, regarding submitting a utility patent application based upon the provisional patent application. Mr. Kimes made no mention that the provisional application did not name Professors Stolfo and Keromytis as inventors, but instead only named as inventors Symantec's Mr. Shou and Mr. Dacier. Mr. Kimes attached a draft of the utility patent application which listed Mr. Shou, Mr. Dacier, Professor Stolfo, and Professor Keromytis as inventors (along with Kathleen McKeown, a Columbia faculty member who worked on natural language generation for the decoy technology). Mr. Kimes asked Professors Stolfo and Keromytis to review the draft patent application and confirm that they were inventors.

38. On March 31, 2011, Professor Stolfo told Mr. Kimes: “I invented the concept long before discussing this with anyone at Symantec and filed for patent protection many months ago. I thought this was carefully explained to Darren and others long ago. I believe Columbia explained this, too. It is a mistake to claim anyone else invented the concept.” That same day Columbia’s Calvin Chu reiterated to Mr. Kimes that Symantec should not file the application because Columbia was already actively pursuing patenting for this technology due to its strong commercial potential. Columbia informed Symantec that it should have a business discussion with Columbia if it wanted access to the technology.

39. On April 4, 2011, without informing Columbia, Symantec filed its own utility patent application directed at the decoy technology invented by Professors Stolfo and Keromytis. Symantec’s application, United States Patent Application No. 13/066,013, claimed priority to the Provisional Application No. 61/320,609. The utility application largely matched the draft application that Symantec provided to Columbia on March 11, 2011 with the notable exception that Symantec deleted all of the Columbia personnel from the list of inventors. Symantec’s patent application sought claims based directly on Professor Stolfo and Keromytis’s work, the same work Columbia disclosed to Symantec, including in connection with the grant proposals.

**c. Symantec Hides Its Tracks In The PTO**

40. A patent application normally becomes public after eighteen months, when the application is published by the PTO. However, at the time of filing the utility application, Symantec requested that the patent application not publish at the normal eighteen months, but instead remain secret until patent issuance. Because the application remained secret, Columbia (and the public) was unaware of the utility application’s filing or prosecution until the patent issued to Symantec on October 1, 2013 as United States Patent No. 8,549,643 (the “‘643 patent”), entitled “Using decoys by a data loss prevention system to protect against unscripted activity.” The ‘643 patent lists Symantec’s Darren Shou as the sole inventor. A copy of the ‘643 patent is attached as Exhibit F.

41. Now that the application that resulted in the '643 patent has become publicly available with the issuance of the patent, Columbia has learned that Symantec was not candid with the PTO—or with Columbia. For example, Symantec submitted a sworn declaration that Symantec's Darren Shou was the sole inventor even though the application was based on disclosures he received directly from Columbia and from prior grant proposals with which he had absolutely no involvement. Moreover, despite having knowledge of Professors Stolfo and Keromytis's inventive work and notice of prior-filed Columbia patent applications on the decoy technology, Symantec did not submit any of this material to the PTO.

**FIRST CLAIM FOR RELIEF**

**(Infringement of U.S. Patent No. 7,487,544)**

42. Columbia re-alleges and incorporates by reference paragraphs 1 through 41 of the Complaint as if fully set forth herein.

43. On February 3, 2009, the '544 patent, entitled "System And Methods For Detection Of New Malicious Executables," was duly and legally issued by the PTO in full compliance with Title 35 of the United States Code. The '544 patent is valid and enforceable. A true and correct copy of the '544 patent is attached as Exhibit A.

44. Columbia is the owner of the entire right, title, and interest in and to the '544 patent, and has the right to bring this suit to recover damages for any current, past, or future infringement of the '544 patent.

45. The '544 patent includes 43 claims. By way of example, claim 1 of the '544 patent recites:

1. A method for classifying an executable attachment in an email received at an email processing application of a computer system comprising:
  - a) filtering said executable attachment from said email;
  - b) extracting a byte sequence feature from said executable attachment; and
  - c) classifying said executable attachment by comparing said byte sequence feature of said executable attachment with a classification rule set derived from byte sequence

features of a set of executables having a predetermined class in a set of classes to determine the probability whether said executable attachment is malicious, wherein extracting said byte sequence features from said executable attachment comprises creating a byte string representative of resources referenced by said executable attachment.

46. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and is currently infringing one or more claims of the '544 patent, in violation of 35 U.S.C. § 271, literally and/or under the doctrine of equivalents, by, among other things, making, using, offering for sale, selling, and/or importing within this judicial district and elsewhere in the United States, without license or authority from Columbia, Symantec antivirus and computer security software products and services that classify executable programs and attachments in an email within the scope of one or more claims of the '544 patent. The infringing antivirus and computer security software products and services that fall within the scope of one or more claims of the '544 patent, include without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, among others that may be identified during the course of these proceedings.

47. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '544 patent under 35 U.S.C. § 271(b) by actively inducing infringement of one or more claims of the '544 patent, literally and/or under the doctrine of equivalents, by, among other things, offering for sale, selling, promoting, and advertising the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, and by encouraging, teaching and instructing users, customers and potential customers to use those products and services in a manner that infringes one or more claims of the '544 patent.

48. Columbia is informed and believes, and on that basis alleges, that Symantec knowingly, intentionally, and actively aided and abetted the direct infringement (literally and/or under the doctrine of equivalents) of one or more claims of the '544 patent by providing manuals, guides and support and otherwise instructing, educating, and encouraging users, customers, and potential customers to scan emails, classify executable programs, and use the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, in a manner that infringes the '544 patent. The statements and materials Symantec distributes to its customers regarding its products and services specifically instruct and endorse the use of methods and systems that directly infringe the '544 patent, literally and/or under the doctrine of equivalents.

49. Columbia is informed and believes, and on that basis alleges, that Symantec engaged in these acts with knowledge of the '544 patent and the specific intent to encourage its customers' and potential customers' direct infringement of one or more claims of the '544 patent.

50. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '544 patent under 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '544 patent, literally and/or under the doctrine of equivalents, by offering for sale and selling the Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, to users, customers, and potential customers, with knowledge of the '544 patent and knowing that its products are especially made or especially adapted for infringing use. The Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec



Mail Security, and related products and services, include one or more material parts of the claimed invention of the '544 patent, and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

51. Columbia is informed and believes, and on that basis alleges, that Symantec and certain of its officers and employees have been aware of the existence of the '544 patent and, despite such knowledge, Symantec has continued to willfully, wantonly, and deliberately engage in acts of infringement of the '544 patent, justifying an award to Columbia of increased damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

52. Symantec's acts of infringement have caused damage to Columbia in an amount to be proven at trial. Columbia is entitled to recover damages adequate to compensate it for the infringement complained of herein, but in no event less than a reasonable royalty.

53. Columbia has suffered irreparable injury as a direct and proximate result of Symantec's conduct for which there is no adequate remedy at law and will continue to suffer such irreparable injury.

### **SECOND CLAIM FOR RELIEF**

#### **(Infringement of U.S. Patent No. 7,979,907)**

54. Columbia re-alleges and incorporates by reference paragraphs 1 through 41 of this Complaint as if fully set forth herein.

55. On July 12, 2011, the '907 patent, entitled "System And Methods For Detection Of New Malicious Executables," was duly and legally issued by the PTO in full compliance with Title 35 of the United States Code. The '907 patent is valid and enforceable. A true and correct copy of the '907 patent is attached as Exhibit B.

56. Columbia is the owner of the entire right, title, and interest in and to the '907 patent, and has the right to bring this suit to recover damages for any current, past, or future infringement of the '907 patent.

57. The '907 patent includes 20 claims. By way of example, claim 1 of the '907 patent recites:

1. A method for classifying an executable attachment in an email received at a computer system comprising:

- a) filtering said executable attachment from said email;
- b) extracting a byte sequence feature from said executable attachment; and
- c) classifying said executable attachment by comparing said byte sequence feature of said executable attachment with a classification rule set derived from byte sequence features of a set of executables having a predetermined class in a set of classes,

wherein said classifying comprises determining using a computer processor, with a Multi-Naive Bayes algorithm, a probability that said executable attachment is a member of each class in said set of classes based on said byte sequence feature and dividing said step of determining said probability into a plurality of processing steps and executing said processing steps in parallel.

58. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and is currently infringing one or more claims of the '907 patent, in violation of 35 U.S.C. § 271, literally and/or under the doctrine of equivalents, by, among other things, making, using, offering for sale, selling, and/or importing within this judicial district and elsewhere in the United States, without license or authority from Columbia, Symantec antivirus and computer security software products and services that classify executable programs and attachments in an email within the scope of one or more claims of the '907 patent. The infringing antivirus and computer security software products and services that fall within the scope of one or more claims of the '907 patent, include without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, among others that may be identified during the course of these proceedings.

59. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '907 patent under 35 U.S.C. § 271(b) by actively inducing infringement of one or more claims of the '907 patent, literally and/or under the doctrine of

equivalents, by, among other things, offering for sale, selling, promoting, and advertising the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, and by encouraging, teaching and instructing users, customers and potential customers to use those products and services in a manner that infringes one or more claims of the '907 patent.

60. Columbia is informed and believes, and on that basis alleges, that Symantec knowingly, intentionally, and actively aided and abetted the direct infringement (literally and/or under the doctrine of equivalents) of one or more claims of the '907 patent by providing manuals, guides and support and otherwise instructing, educating, and encouraging users, customers, and potential customers to scan emails, classify executable programs, and use the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, in a manner that infringes the '907 patent. The statements and materials Symantec distributes to its customers regarding its products and services specifically instruct and endorse the use of methods and systems that directly infringe the '907 patent, literally and/or under the doctrine of equivalents.

61. Columbia is informed and believes, and on that basis alleges, that Symantec engaged in these acts with knowledge of the '907 patent and the specific intent to encourage its customers' and potential customers' direct infringement of one or more claims of the '907 patent.

62. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '907 patent under 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '907 patent, literally and/or under the doctrine of equivalents, by offering for sale and selling the Symantec antivirus and computer security

products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, to users, customers, and potential customers, with knowledge of the '907 patent and knowing that its products are especially made or especially adapted for infringing use. The Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, include one or more material parts of the claimed invention of the '907 patent, and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

63. Columbia is informed and believes, and on that basis alleges, that Symantec and certain of its officers and employees have been aware of the existence of the '907 patent and, despite such knowledge, Symantec has continued to willfully, wantonly, and deliberately engage in acts of infringement of the '907 patent, justifying an award to Columbia of increased damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

64. Symantec's acts of infringement have caused damage to Columbia in an amount to be proven at trial. Columbia is entitled to recover damages adequate to compensate it for the infringement complained of herein, but in no event less than a reasonable royalty.

65. Columbia has suffered irreparable injury as a direct and proximate result of Symantec's conduct for which there is no adequate remedy at law.

### **THIRD CLAIM FOR RELIEF**

#### **(Infringement of U.S. Patent No. 7,448,084)**

66. Columbia re-alleges and incorporates by reference paragraphs 1 through 41 of this Complaint as if fully set forth herein.

67. On November 4, 2008, the '084 patent, entitled "System And Methods For Detecting Intrusions In A Computer System By Monitoring Operating System Registry Accesses," was duly and legally issued by the PTO in full compliance with Title 35 of the United

States Code. The '084 patent is valid and enforceable. A true and correct copy of the '084 patent is attached as Exhibit C.

68. Columbia is the owner of the entire right, title, and interest in and to the '084 patent, and has the right to bring this suit to recover damages for any current, past, or future infringement of the '084 patent.

69. The '084 patent includes 28 claims. By way of example, claim 1 of the '084 patent recites:

1. A method for detecting intrusions in the operation of a computer system comprising:

(a) gathering features from records of normal processes that access the operating system registry;

(b) generating a probabilistic model of normal computer system usage based on the features and determining the likelihood of observing an event that was not observed during the gathering of features from the records of normal processes; and

(c) analyzing features from a record of a process that accesses the operating system registry to detect deviations from normal computer system usage to determine whether the access to the operating system registry is an anomaly.

70. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and is currently infringing one or more claims of the '084 patent, in violation of 35 U.S.C. § 271, literally and/or under the doctrine of equivalents, by, among other things, making, using, offering for sale, selling, and/or importing within this judicial district and elsewhere in the United States, without license or authority from Columbia, Symantec antivirus and computer security software products and services that perform intrusion detection within the scope of one or more claims of the '084 patent. The infringing antivirus and computer security software products and services that fall within the scope of one or more claims of the '084 patent, include without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and

related products and services, among others that may be identified during the course of these proceedings.

71. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '084 patent under 35 U.S.C. § 271(b) by actively inducing infringement of one or more claims of the '084 patent, literally and/or under the doctrine of equivalents, by, among other things, offering for sale, selling, promoting, and advertising the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, and by encouraging, teaching and instructing users, customers and potential customers to use those products and services in a manner that infringes one or more claims of the '084 patent.

72. Columbia is informed and believes, and on that basis alleges, that Symantec knowingly, intentionally, and actively aided and abetted the direct infringement (literally and/or under the doctrine of equivalents) of one or more claims of the '084 patent by providing manuals, guides and support and otherwise instructing, educating, and encouraging users, customers, and potential customers to use the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, in a manner that infringes the '084 patent. The statements and materials Symantec distributes to its customers regarding its products and services specifically instruct and endorse the use of methods and systems that directly infringe the '084 patent, literally and/or under the doctrine of equivalents.

73. Columbia is informed and believes, and on that basis alleges, that Symantec engaged in these acts with knowledge of the '084 patent and the specific intent to encourage its customers' and potential customers' direct infringement of one or more claims of the '084 patent.

74. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '084 patent under 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '084 patent, literally and/or under the doctrine of equivalents, by offering for sale and selling the Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, to users, customers, and potential customers, with knowledge of the '084 patent and knowing that its products are especially made or especially adapted for infringing use. The Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, include one or more material parts of the claimed invention of the '084 patent, and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

75. Columbia is informed and believes, and on that basis alleges, that Symantec and certain of its officers and employees have been aware of the existence of the '084 patent and, despite such knowledge, Symantec has continued to willfully, wantonly, and deliberately engage in acts of infringement of the '084 patent, justifying an award to Columbia of increased damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

76. Symantec's acts of infringement have caused damage to Columbia in an amount to be proven at trial. Columbia is entitled to recover damages adequate to compensate it for the infringement complained of herein, but in no event less than a reasonable royalty.

77. Columbia has suffered irreparable injury as a direct and proximate result of Symantec's conduct for which there is no adequate remedy at law.

**FOURTH CLAIM FOR RELIEF**

**(Infringement of U.S. Patent No. 7,913,306)**

78. Columbia re-alleges and incorporates by reference paragraphs 1 through 41 of this Complaint as if fully set forth herein.

79. On March 22, 2011, the '306 patent, entitled "System And Methods For Detecting Intrusions In A Computer System By Monitoring Operating System Registry Accesses," was duly and legally issued by the PTO in full compliance with Title 35 of the United States Code. The '306 patent is valid and enforceable. A true and correct copy of the '306 patent is attached as Exhibit D.

80. Columbia is the owner of the entire right, title, and interest in and to the '306 patent, and has the right to bring this suit to recover damages for any current, past, or future infringement of the '306 patent.

81. The '306 patent includes 11 claims. By way of example, claim 1 of the '306 patent recites:

1. A method for detecting intrusions in the operation of a computer system comprising:

(a) gathering features from records of normal processes that access the file system of the computer;

(b) generating a probabilistic model of normal computer system usage based on occurrences of the features and determining the likelihood of observing an event that was not observed during the gathering of features from the records of normal processes; and

(c) analyzing features from a record of a process that accesses the file system to detect deviations from normal computer system usage to determine whether the access to the file system is an anomaly.

82. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and is currently infringing one or more claims of the '306 patent, in violation of 35 U.S.C. § 271, literally and/or under the doctrine of equivalents, by, among other things, making,



using, offering for sale, selling, and/or importing within this judicial district and elsewhere in the United States, without license or authority from Columbia, Symantec antivirus and computer security software products and services that perform intrusion detection within the scope of one or more claims of the '306 patent. The infringing antivirus and computer security software products and services that fall within the scope of one or more claims of the '306 patent, include without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, among others that may be identified during the course of these proceedings.

83. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '306 patent under 35 U.S.C. § 271(b) by actively inducing infringement of one or more claims of the '306 patent, literally and/or under the doctrine of equivalents, by, among other things, offering for sale, selling, promoting, and advertising the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, and by encouraging, teaching and instructing users, customers and potential customers to use those products and services in a manner that infringes one or more claims of the '306 patent.

84. Columbia is informed and believes, and on that basis alleges, that Symantec knowingly, intentionally, and actively aided and abetted the direct infringement (literally and/or under the doctrine of equivalents) of one or more claims of the '306 patent by providing manuals, guides and support and otherwise instructing, educating, and encouraging users, customers, and potential customers to use the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, in a manner that infringes the '306

patent. The statements and materials Symantec distributes to its customers regarding its products and services specifically instruct and endorse the use of methods that directly infringe the '306 patent, literally and/or under the doctrine of equivalents.

85. Columbia is informed and believes, and on that basis alleges, that Symantec engaged in these acts with knowledge of the '306 patent and the specific intent to encourage its customers' and potential customers' direct infringement of one or more claims of the '306 patent.

86. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '306 patent under 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '306 patent, literally and/or under the doctrine of equivalents, by offering for sale and selling the Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, to users, customers, and potential customers, with knowledge of the '306 patent and knowing that its products are especially made or especially adapted for infringing use. The Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, include one or more material parts of the claimed invention of the '306 patent, and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

87. Columbia is informed and believes, and on that basis alleges, that Symantec and certain of its officers and employees have been aware of the existence of the '306 patent and, despite such knowledge, Symantec has continued to willfully, wantonly, and deliberately engage in acts of infringement of the '306 patent, justifying an award to Columbia of increased damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

88. Symantec's acts of infringement have caused damage to Columbia in an amount to be proven at trial. Columbia is entitled to recover damages adequate to compensate it for the infringement complained of herein, but in no event less than a reasonable royalty.

89. Columbia has suffered irreparable injury as a direct and proximate result of Symantec's conduct for which there is no adequate remedy at law.

**FIFTH CLAIM FOR RELIEF**

**(Infringement of U.S. Patent No. 8,074,115)**

90. Columbia re-alleges and incorporates by reference paragraphs 1 through 41 of this Complaint as if fully set forth herein.

91. On December 6, 2011, the '115 patent, entitled "Methods, Media And Systems For Detecting Anomalous Program Executions," was duly and legally issued by the PTO in full compliance with Title 35 of the United States Code. The '115 patent is valid and enforceable. A true and correct copy of the '115 patent is attached as Exhibit E.

92. Columbia is the owner of the entire right, title, and interest in and to the '115 patent, and has the right to bring this suit to recover damages for any current, past, or future infringement of the '115 patent.

93. The '115 patent includes 42 claims. By way of example, claim 1 of the '115 patent recites:

1. A method for detecting anomalous program executions, comprising:  
executing at least a part of a program in an emulator;  
comparing a function call made in the emulator to a model of function calls for the at least a part of the program;  
identifying the function call as anomalous based on the comparison; and  
upon identifying the anomalous function call, notifying an application community that includes a plurality of computers of the anomalous function call.

94. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and is currently infringing one or more claims of the '115 patent, in violation of 35

U.S.C. § 271, literally and/or under the doctrine of equivalents, by, among other things, making, using, offering for sale, selling, and/or importing within this judicial district and elsewhere in the United States, without license or authority from Columbia, Symantec antivirus and computer security software products and services that detect anomalous program executions within the scope of one or more claims of the '115 patent. The infringing antivirus and computer security software products and services that fall within the scope of one or more claims of the '115 patent, include without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, among others that may be identified during the course of these proceedings.

95. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '115 patent under 35 U.S.C. § 271(b) by actively inducing infringement of one or more claims of the '115 patent, literally and/or under the doctrine of equivalents, by, among other things, offering for sale, selling, promoting, and advertising the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, and by encouraging, teaching and instructing users, customers and potential customers to use those products and services in a manner that infringes one or more claims of the '115 patent.

96. Columbia is informed and believes, and on that basis alleges, that Symantec knowingly, intentionally, and actively aided and abetted the direct infringement (literally and/or under the doctrine of equivalents) of one or more claims of the '115 patent by providing manuals, guides and support and otherwise instructing, educating, and encouraging users, customers, and potential customers to use the Symantec antivirus and computer security software products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud,

Symantec Mail Security, and related products and services, in a manner that infringes the '115 patent. The statements and materials Symantec distributes to its customers regarding its products and services specifically instruct and endorse the use of methods and systems that directly infringe the '115 patent, literally and/or under the doctrine of equivalents.

97. Columbia is informed and believes, and on that basis alleges, that Symantec engaged in these acts with knowledge of the '115 patent and the specific intent to encourage its customers' and potential customers' direct infringement of one or more claims of the '115 patent.

98. Columbia is informed and believes, and on that basis alleges, that Symantec has infringed and continues to infringe the '115 patent under 35 U.S.C. § 271(c) by contributing to infringement of one or more claims of the '115 patent, literally and/or under the doctrine of equivalents, by offering for sale and selling the Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, to users, customers, and potential customers, with knowledge of the '115 patent and knowing that its products are especially made or especially adapted for infringing use. The Symantec antivirus and computer security products and services, including without limitation Symantec's Norton AntiVirus, Norton 360, Norton Internet Security, Symantec Endpoint Protection, Symantec Email Security.cloud, Symantec Mail Security, and related products and services, include one or more material parts of the claimed invention of the '115 patent, and are not a staple article or commodity of commerce suitable for substantial non-infringing use.

99. Columbia is informed and believes, and on that basis alleges, that Symantec and certain of its officers and employees have been aware of the existence of the '115 patent and, despite such knowledge, Symantec has continued to willfully, wantonly, and deliberately engage in acts of infringement of the '115 patent, justifying an award to Columbia of increased damages under 35 U.S.C. § 284, and attorneys' fees and costs incurred under 35 U.S.C. § 285.

100. Symantec's acts of infringement have caused damage to Columbia in an amount to be proven at trial. Columbia is entitled to recover damages adequate to compensate it for the infringement complained of herein, but in no event less than a reasonable royalty.

101. Columbia has suffered irreparable injury as a direct and proximate result of Symantec's conduct for which there is no adequate remedy at law.

**SIXTH CLAIM FOR RELIEF**

**(Correction of Inventorship for U.S. Patent No. 8,549,643)**

102. Columbia hereby re-alleges and incorporates by reference paragraphs 1 through 41 of the Complaint as if fully set forth herein.

103. Professors Stolfo and Keromytis invented the subject matter claimed in the '643 patent, on their own or alternatively in collaboration with the other named inventor, and are either the sole or joint inventors of all the claims of the '643 patent.

104. Professors Stolfo and Keromytis are not listed on the '643 patent as the sole or joint inventors of all the inventions claimed in the '643 patent.

105. The omission of Professors Stolfo and Keromytis as the sole or joint inventors on the '643 patent occurred without any deceptive intent on the part of Professors Stolfo and Keromytis.

106. To reflect the true and correct inventors of the subject matter of the '643 patent, and secure Columbia's rights therein, Professors Stolfo and Keromytis should be named as either the only inventors or, in the alternative, as joint inventors on the '643 patent.

**PRAYER FOR RELIEF**

WHEREFORE, Columbia prays for relief against Symantec as follows:

- A. For a determination that Symantec infringes one or more claims of the '544, '907, '084, '306, and '115 patents, and that Symantec's infringement is willful;
  - B. For damages adequate to compensate Columbia for Symantec's infringement of the '544, '907, '084, '306, and '115 patents in an amount to be determined at trial, together with interest and costs under 35 U.S.C. § 284;
  - C. For entry of all just and proper equitable relief from Symantec's continuing infringement of the '544, '907, '084, '306, and '115 patents;
  - D. For an order correcting inventorship on the '643 patent to name Professors Stolfo and Keromytis as the sole inventors, or in the alternative as joint inventors.
  - E. For imposition of constructive trust requiring Symantec to hold the '643 patent for the benefit of Columbia;
  - F. For an award of pre-judgment and post-judgment interest on the damages assessed;
  - G. For supplemental damages incurred by Columbia, including without limitation interest;
  - H. For a determination that this is an exceptional case under 35 U.S.C. § 285 and that an award of attorneys' fees and costs to Columbia is warranted;
  - I. For entry of judgment against Symantec and in favor of Columbia in all respects;
- and

J. For such other and further relief as this Court deems just and proper.

December 5, 2013

Respectfully submitted,

THE TRUSTEES OF COLUMBIA UNIVERSITY  
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**DEMAND FOR JURY TRIAL**

Pursuant to Federal Rule of Civil Procedure 38(b), Columbia hereby demands a trial by jury on all issues triable to a jury.

December 5, 2013

Respectfully submitted,

THE TRUSTEES OF COLUMBIA UNIVERSITY  
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